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Theorizing the meso level: the household as a crucible of pro-environmental behaviour

Louise Reid,[1]* Philip Sutton[2] and Colin Hunter[1]

[1]Department of Geography and Environment, University of Aberdeen, St Mary's Building, Elphinstone Road, Aberdeen AB24 3UF, UK
[2]Independent

Abstract: This paper identifies the need to develop a conceptual approach that moves away from dichotomous thinking about pro-environmental behaviour by considering the meso level of reality, through which macro level change can be observed and micro level activity can be contextualized. The discussion reviews pro-environmental behaviour literatures, presenting an alternative conceptual approach that incorporates the importance of scale and the social units to which people belong. In particular, the paper argues that greater understanding of the household, as a unit within the meso level, offers an opportunity to rethink the future research agenda for the study of pro-environmental behaviour.

Key words: conceptual approach, environmental policy, households, meso level, pro-environmental behaviour, sustainable development.

I Introduction

Pro-environmental behaviour is behaviour that has a reduced impact on the environment (including, for example, switching off lights, recycling and using sustainable modes of travel) and has received much recent attention in the academic (Gatersleben *et al*., 2002; Barr and Gilg, 2005; Hobson, 2006) and policy (Darnton, 2004; Jackson, 2005; Uzzell *et al*., 2006) literatures, the latter attempting to understand the determinants, motivators of, and barriers to, widespread pro-environmental behaviour. Despite this growing commonality of interest, pro-environmental behaviour has, so far, failed to manifest itself within mainstream UK culture. In addition, irrespective of whether they hold pro-environmental attitudes, large sections of the public remain unconvinced of the need to undertake more environmentally sustainable practices (Hobson, 2003). Thus, current thinking and approaches towards pro-environmental behaviour in the UK are not as effective as desired by policy-makers and there is a need to develop novel conceptual and practical approaches to the issue. This paper argues that a better understanding of the household as a societal unit within the meso level of social reality offers an opportunity to rethink the conventional

*Author for correspondence. Email: l.a.reid@abdn.ac.uk

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polarization between the individual level (micro level) and regional or national level (macro level) in pro-environmental behaviour research and policy-making.

First, the paper will present a review of key trends in pro-environmental behaviour research at the macro and micro levels, with an emphasis on the micro level, reflecting the larger body of work at this level of analysis. As representative illustrations, the paper provides a critique of Inglehart's postmaterial values thesis, the Theory of Reasoned Action (TRA), and the Theory of Planned Behaviour (TPB), bringing to the fore literature outwith geography in order to stimulate debate within it. The second part of the paper is concerned with exploring some of the gaps in knowledge surrounding pro-environmental behaviour acknowledging debates surrounding the issue of scale although the paper does not seek to contribute to heuristic debates on scale *per se*.[1] This part therefore begins to develop a conceptual approach drawing on some recent work on meso level entities (Haanpaa, 2005), which suggests that meso level research could be productive. The paper presents a preliminary theoretical argument on the significance of the meso level for understanding pro-environmental behaviour, using the household as an example to highlight how pro-environmental behaviours may be generated, mediated and propagated. In recognition of the limitations that exist in current pro-environmental behaviour research, the paper concludes by offering a research agenda based on understanding the utility of the household as a crucible for such behaviour.

II Macro level approaches to pro-environmental behaviour

Macro level approaches can be characterized as having a central concern with the overall system, making it a 'top down' analysis in research and policy-making with high levels of aggregation and generalization (Schenk *et al*., 2007). Macro level research will often examine one institution, such as the state or a large organization (for example, the NHS), and the role this has in promoting pro-environmental behaviour (Tudor *et al*., 2007). However, in doing so, macro studies often fail to acknowledge the diversity of other macro level entities. Haanpaa (2005: 4) states, for example, that macro level studies are predominantly concerned with '(inter)national systems and institutions … governmental policy-making, welfare state', and the 'mass market'. Sociology, as a discipline concerned with large-scale and long-term social processes (Collins, 1981), conditions, systems and networks (Sibeon, 1999), has tended to focus on widespread value change[2] within and across societies (Inglehart, 1995) as well as the rise and impact of environmental social movements (Dobson, 1990; Sutton, 2004). The ensuing discussion will explore macro level approaches, which, it has been argued, neglect the heterogeneity of lower order actors and institutions (Schenk *et al*., 2007). If so, then it may be argued that macro level approaches offer limited scope both for policy-makers and in terms of practical ways of promoting pro-environmental behaviour at the individual level.

One 'founding father' of sociology, Émile Durkheim, argued that 'there exists a social level of reality that cannot be reduced to the biological' (Sutton, 2004: 55), thereby recognizing the need for research to capture those interactions and processes (both explicit and implicit) that are lost when focusing on the micro level of social life. Such macro level approaches centre on social conditions and systems (Sibeon, 1999) and have attempted to explore societal or cultural factors that account for individual traits (Haanpaa, 2005). Indeed, there is some debate as to whether macro level empirical data is simply evidence from micro level experiences aggregated upwards. For example, 'social patterns, institutions and organizations are only abstractions from the behaviour of individuals and summaries of the distribution of different micro level behaviours in time in

space' (Collins, 1981: 989). Collins (1981) suggests that even though such aggregation might be the case, much behaviour, including pro-environmental behaviour, is not just a result of micro level experiences, but also refers to abstract or reified social entities, thus justifying the need for macro level research.

The majority of recent macro level research on pro-environmental behaviour has centred on value change within and across societies as a result of long-term social development and increasing access to more material goods (Haanpaa, 2005). Of central importance in these debates is Inglehart's postmaterial values thesis, which proposes that as the developed societies became more technologically and economically advanced during the period of relative peace following the second world war, the dominant values within societies began to shift, albeit gradually (Johnston *et al*., 2000). Thus, 'industrialisation leads to occupational specialisation, rising educational levels, rising income levels, and eventually brings unforeseen changes – changes in gender roles, attitudes toward authorities and sexual norms, declining fertility rates, broader political participation and less easily led publics' (Inglehart and Baker, 2000: 21, in Haller 2001: 141). The large-scale survey evidence upon which Inglehart's thesis rests is impressive, relying on multiple cross-national surveys of environmental awareness and opinion, although Inglehart (1995: 57) himself notes that the 'motives for mass support', upon which such surveys are based, are poorly understood. Inglehart's postmaterial values thesis has been used to explore the relationship between a society's development and environmental values, positing that as societies become 'richer' or more developed pro-environmental values become more commonplace (Inglehart, 1995). Inglehart draws particular attention to the satisfaction of basic human needs within developed countries which then allow people to focus on improving the quality of their lives, including improving their environment, thus shifting social concerns away from basic material needs as these come to be taken for granted (Sutton, 2004). Indeed, Inglehart (1995: 57) states that postmaterialist values, which emphasize the quality of life, are much more 'apt to give high priority to protecting the environment'. In this way, Inglehart's thesis begins to explain the rising levels of support for environmental social movements.

There have, however, been objections to Inglehart's thesis. Haller (2001) presents a particularly persuasive argument based on three objections. First, he argues that the values within any society are complex and differentiated and cannot be thought of as occurring only on one quantitative-linear axis. That is, a society's environmental values vary according to where that society exists on the 'rich' to 'poor' scale. Second, Haller argues that the theory does not allow for reverse effects such as the influence of emerging values on continuing economic development. Third, Haller queries the way that empirical evidence is used to support the thesis, notably the inference of 'typical or dominant values' from 'aggregations of survey findings' (2001: 150) and argues that such thinking does not allow for discussion of how the distribution of values might vary within particular countries.

Visible from this discussion has been the preponderance of homogeneity and 'top-down thinking' when discussing changes in society, and the problem of overgeneralizing the motives behind value change. Macro approaches are useful in the sense that they give some impression about the direction of value change within modern societies, however general that may be. But macro approaches tell only one part of the story. Before discussing the importance of investigating meso level pro-environmental behaviour, and indeed why doing so might contribute to a better understanding of pro-environmental behaviour, it is useful to examine the development of micro level approaches.

III Micro level approaches towards understanding pro-environmental behaviour

Much of the research that has sought to uncover and understand the pro-environmental behaviour of the individual, its determinants, contexts and impact has been at the micro level of individual psychology (Gatersleben *et al*., 2002; Norlund and Garvill, 2002; Joireman *et al*., 2004; Darnton, 2004; Jackson, 2005; Barr, 2006). This concentration on the individual is epitomized in descriptions of national environmental policy debates, where measures aimed at influencing the behaviour of individuals in pro-environmental directions have been strongly to the fore; the UK's Sustainable Development Strategy is one prominent example (Barr and Gilg, 2005). Conceptual approaches have been developed in an attempt to frame and predict the pro-environmental behaviour of the individual, citing attitudes, beliefs and subjective norms as the principal derivatives of such behaviour. In recognition of the importance of these conceptual approaches and behavioural derivatives in the literature, these form the basis of the discussion.

Numerous studies (Gatersleben *et al*., 2002; Darnton, 2004; Barr and Gilg, 2005; Jackson, 2005) that aim to understand and explain the pro-environmental behaviour of individuals refer to the Theory of Reasoned Action (TRA) (Ajzen and Fishbein, 1970; Fishbein and Ajzen, 1975), later refined as the Theory of Planned Behaviour (TPB) (Ajzen, 1985; 1991). Indeed, some have attempted to build upon or refine either the TRA or TPB specifically to deal with pro-environmental behaviours (Gatersleben *et al*., 2002; Hobson, 2003; 2006; Joireman *et al*., 2004; Knussen *et al*., 2004; Mannetti *et al*., 2004; Barr and Gilg, 2005; Collins and Chambers, 2005). Outwith their application to pro-environmental behaviour research, the TRA and TPB have been applied across many disciplinary areas. Armitage and Conner (2001) report on 185 published studies on the TPB up to 1997 in their meta-analysis, which makes it worthy of further discussion.

The TRA (Figure 1) attempts to predict behaviour by understanding its antecedents such as behavioural intention, attitudes towards the behaviour in question and subjective norm (as will be discussed later), and has 'produced consistent results suggesting a link between' these and 'the performance of the behaviour itself' (Burton, 2004: 362). It is important to note, however, that a fundamental assumption of the TRA is that behaviour is under volitional control, meaning that the behaviour is determined by factors within an individual's control (Sheppard *et al*., 1988), thus restricting the application of the TRA 'to those behaviours … performed because the person *consciously* wishes to perform them' (Burton, 2004: 362, emphasis added). In this sense the TRA can be seen as belonging to the wider perspective of rational choice theory in the social sciences. In addition, it is similarly important to understand that the TRA focuses only on the determinants relating to a single behaviour, not a group of behaviours (Sheppard *et al*., 1988).

As demonstrated in Figure 1, an intention to undertake a behaviour is the immediate determinant of the behaviour and, according to Ajzen (1991), the intention construct is assumed to capture the motivational factors that influence behaviour in addition to indicating the willingness of an individual to *perform* the behaviour (Armitage and Conner, 2001). The behavioural intention itself is driven by two factors: first, the attitude towards the behaviour and, second, the subjective norm, although, as Ajzen (1985) recognized, the relative weight of the attitudinal and normative factors may vary from one person to another and depend upon the specific behavioural intention under consideration. Thus, the more favourable the attitude and subjective norm, the stronger should be the person's intention to perform the behaviour. The defining of attitudinal and subjective norm factors is of utmost

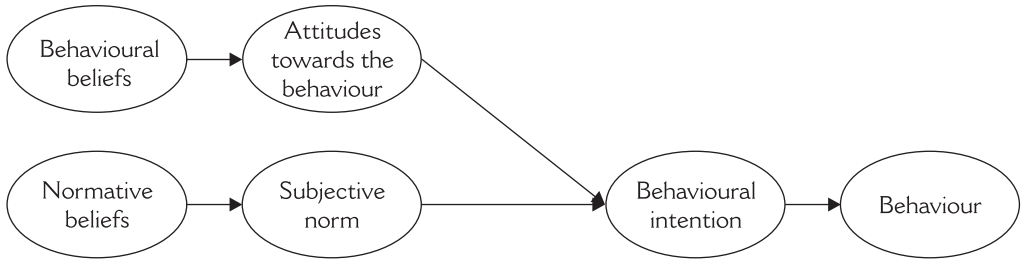

Figure 1 Theory of Reasoned Action (TRA)
Source: After Ajzen and Fishbein (1980).

importance given that they are the focus of much discussion in the social psychology literature (Sheppard *et al*., 1988; Kaiser *et al*., 1999; Corraliza and Berenguer, 2000; Collins and Chambers, 2005). Indeed, as Sheppard *et al*. (1988) argue, the misinterpretation and/or misrepresentation of these factors in subsequent studies and applications of the TRA and TPB to pro-environmental behaviour reinforce the need for clear understandings of such factors. One is the role of environmental attitudes and discussion of these[3] dominates the environmental psychology literature on pro-environmental behaviour, with almost two-thirds of publications focusing on this area (Kaiser *et al*., 1999).

There is a great deal of discussion surrounding the role of general environmental attitudes as opposed to specific attitudes towards pro-environmental behaviour and Kaiser *et al*. (1999: 2) make a helpful distinction between a 'general attitude towards the environment (such as air quality) or towards certain pro-environmental behaviours (such as recycling or political activism)'. This distinction is significant given the failure of general attitude research to accurately predict individual behaviour (Wicker, 1969, in Ajzen, 1991). Subsequent work has focused on the so-called 'value-action gap' (Gatersleben *et al*., 2002), which is the finding that despite holding pro-environmental attitudes individuals do not necessarily display corresponding pro-environmental behaviour. The reason for this may be, as Norlund and Garvill (2002) note, that general attitudes are too abstract to be useful and that, when tested, the relationship between general attitudes and individual behaviour is usually quite weak. This is reflected in the TRA, which is 'concerned with attitudes towards behaviour and not with the more traditional attitudes toward objects, people or institutions' (Ajzen, 1985: 14).

The second factor driving behavioural intention in the TRA is the subjective norm, which consists of an individual's beliefs as to whether important others (such as friends, relatives and colleagues) believe that they *should* perform a behaviour. This factor is considered as a situational influence,[4] meaning that it refers to the constraints on and facilitation of behaviour beyond an individual's control (Ajzen and Madden, 1986, in Kaiser *et al*., 1999). The TRA thus recognizes that individuals 'do not act independently of cultural/social influences, but are continually referring their behaviour back to important reference groups' such as their circle of friends, family or household members (Burton, 2004: 363). However, this component of the TRA (and indeed the TPB) has been criticized as being the weakest predictor of behaviour, principally due to issues surrounding its measurement (Armitage and Conner, 2001; Knussen *et al*., 2004). To overcome this, Armitage and Conner (2001) call for the subjective norms component to include additional normative variables such as moral or descriptive norms.

Underlying the attitudinal and subjective norms factors are beliefs regarding the 'consequences of performing the behaviour and about the normative expectations of relevant referents' (that is, important others) (Ajzen and Fishbein, 1980: 16). Such beliefs, they argue, are largely based on the information an individual has and upon what they regard as less direct influences, such as demographic characteristics or personality traits. These, they postulate, influence behaviour through the beliefs that underlie the attitudinal and subjective norm factors.

Given the significant attention that the TRA has received, there has inevitably been criticism of it, mainly concerning the lack of consideration of actions that are in part or wholly determined by factors outwith an individual's voluntary control (Sheppard *et al*., 1988). Such criticisms reflect a generic critique of rational choice theory, that humans are not simply rational but also emotional beings (Gregson *et al*., 2007) and their behaviour cannot simply be reduced to instrumentally rational means-to-ends actions. Following the TRA, and in an attempt to overcome some of its limitations, Ajzen developed the TPB (Figure 2), the principal difference being that the TPB accounts for 'perceived' in addition to 'actual' control over the behaviour in question (Ajzen, 1985). The introduction of perceived behavioural control (PBC) was intended to allow the prediction of behaviours that are not under volitional control (Armitage and Conner, 2001). As Burton (2004: 364) explains, PBC is a 'measure of the extent to which people believe they are able to control the outcome'. Underlying the PBC is the concept of 'control beliefs', which, related to ideas of self-efficacy, reflect an individual's beliefs about the presence of factors that may facilitate or impede the performance of the behaviour (Ajzen, 2001). Thus, a person's behaviour is influenced by the confidence they have in their ability to perform it. In addition, the control beliefs may be a consequence of past experiences and the influences of the experiences of important others (Ajzen, 1991). It is important to note that PBC might also have a direct effect upon actual behaviour, especially when the behaviour in question is perceived to be difficult to perform (Knussen *et al*., 2004).

Criticism of the TPB is that it overlooks emotional variables such as threat, fear, and mood (Dutta-Bergman, 2005) and does not account for the role of past behaviour or habit, which are particularly important when seeking to understand pro-environmental

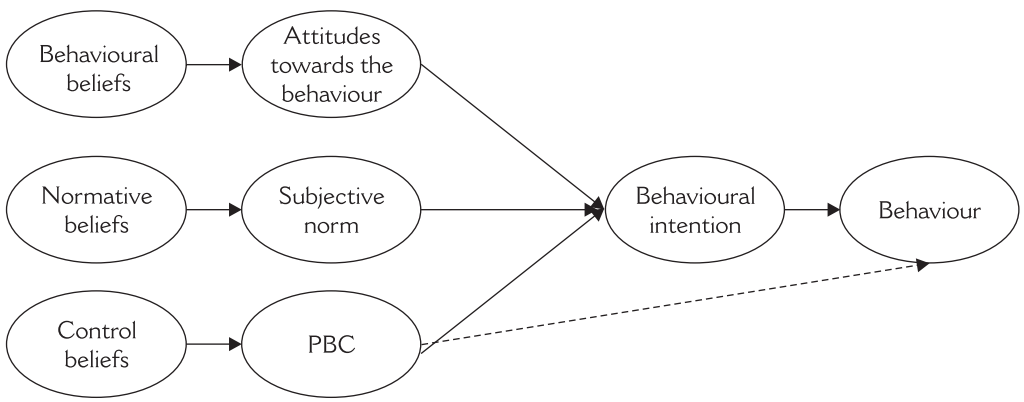

Figure 2 Theory of Planned Behaviour (TPB)
Source: After Armitage and Conner (2001: 472).

behaviour (Knussen *et al*., 2004). Ajzen and Manstead (2007) defend the omission of these variables because, they argue, they are captured within behavioural and normative beliefs. Despite these limitations the TRA and, in particular, the TPB continue to dominate pro-environmental behaviour literatures. Indeed, they have been used to attempt to understand recycling behaviour (Knussen *et al*., 2004; Mannetti *et al*., 2004; Tonglet *et al*., 2004; Barr and Gilg, 2005), travel behaviour (Joireman *et al*., 2004; Collins and Chambers, 2005), energy behaviour (Batley *et al*., 2001), and consumption behaviour (Gatersleben *et al*., 2002; Hobson, 2003; 2006; Jackson, 2005).[5]

While current micro level approaches do, to some extent, offer relevant explanations of some of the drivers of pro-environmental behaviour, there are problems with this kind of approach, perhaps the most significant one being that it can be overly simplistic (Lam, 1999). Such approaches attempt to understand individual behaviour and, although they do incorporate the influence of important others, they do not attempt to provide explanations for pro-environmental *group* behaviour such as household recycling or community habitat restoration. Indeed, the focus on individual behaviour means that they are not suitable for use when aggregated to larger groups and communities. The latter are inherently more complex[6] and, as we will show, often behave in ways that are dissimilar to individuals. Thus, Barr and Gilg (2005) try to use the model to understand household recycling behaviour, but are caught in the trap of diluting the household down to the level of individuals by presenting a framework of recycling behaviour at the individual level.

Of course, it was not the intention of the TRA, TPB or other similar approaches to explore or predict anything other than individual behaviour, but it is important to establish that there is a gap within the research literature in the explanation of group-based pro-environmental behaviour. Our point here is that individualistic approaches have only limited purchase when attempting to explain or predict group-based, or meso level, pro-environmental behaviour. Indeed, we argue that bringing the micro and macro levels together can perhaps best be achieved by considering the meso level of reality, through which macro level change can be observed and micro level activity can be contextualized.

IV The meso level: an alternative conceptual approach

An exclusive focus on either micro or macro levels militates against research across both domains, which, along with continuing environmental degradation (for example, increasing greenhouse gases and growing waste rates) means that a different way of thinking about pro-environmental behaviour is needed, hence our introduction of the meso level conceptual approach. The notion of meso level analysis in the social sciences was popularized in the writings of the American sociologist Robert Merton (1968), who rejected attempts to develop general systems of sociological theory in favour of 'middle range theories' of social phenomena (Haanpaa, 2005). The meso level therefore functions as a 'theoretical field where the structural mechanisms and the interactions between macro and micro levels can be observed' (Haanpaa, 2005: 6). Recognizing the limitations of polarized alternatives such as those presented in the earlier sections of this paper (the macro and micro levels), Haanpaa prefers to use the meso level of analysis in her work, assuming a perspective that views society as 'a dynamic process of interaction between pre-existing social structure and current human actor, through which social structure is reproduced and transformed over time' (Birbour *et al*., 2005: 522, in Haanpaa, 2005: 4).

Such an approach suggests that the meso level can be both a frame for viewing the world and is simultaneously constituted by the processes and interactions within it.

Debates on scale emphasise the distinction between these, one as a scale of observation and the other a scale of explanation (Sayre, 2005; Manson, 2008). Viewing the scale of observation (a frame) and the scale of explanation (understanding processes and interactions) as mutually exclusive has received much attention (Howitt, 1993; Jessop *et al*., 2008; Moore, 2008), and recent discourse suggests that at times, for instance when existing knowledge about an environmental problem is low, both scales can be useful and some elements of them congruent (Manson, 2008; Jones, 2009). Indeed, Jones's (2009) 'phase space' promotes a perspective which 'expresses sociospatial relations from a topological stance *but* insists on the compatibilities between, rather than mutual exclusivities of, flow-like (networks, etc) and more fixed (scales, territories, regions, etc) takes on space' (Jones, 2009: 489, emphasis in original). So far in this paper we have characterized the majority of the literature on pro-environmental behaviour as being concerned with either societal (macro level) approaches or individualistic (micro level) approaches. In so doing we have demonstrated that research on pro-environmental behaviour has been preoccupied with this dichotomous approach, leading us to conclude that there has been a neglect of attention to this middle or meso level. Building on this framing, we now argue that the meso level is in itself important to consider in relation to pro-environmental behaviour, specifically because of the processes and interactions within and between the social units that characterize it.

The meso level, as demonstrated in Figure 3, exists between the micro (the level of the individual) and the macro (the level

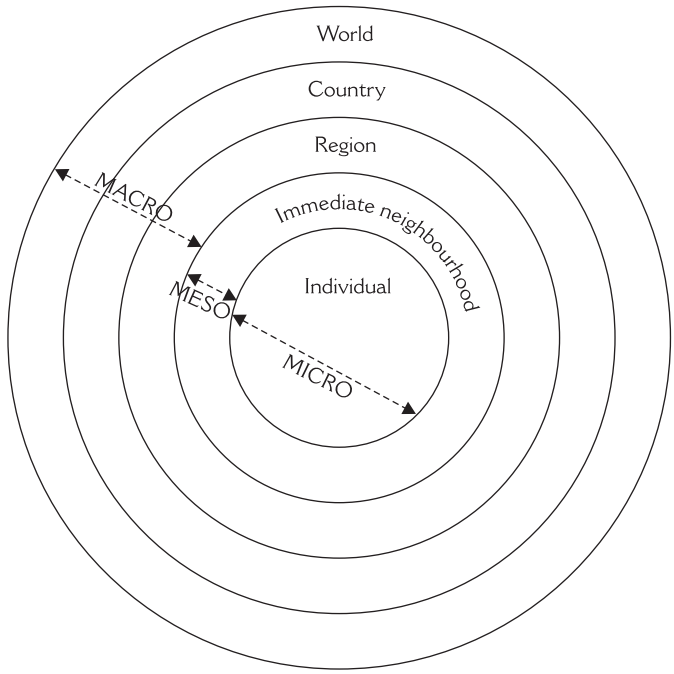

Figure 3 Adapted conceptualization of 'common sense' community types and interactions

Source: After Peters and Jackson (2008: 6).

of societies, regions and nations). By differentiating between the macro and the micro, the meso can be defined as communities of interest akin to 'the local', identifiable by heterogeneity, collective interest and shared social identity. Thus, while we have set out the meso level as a theoretical field, we view it as characterized by a collection of topographic entities (local, neighbourhood, households), the interactions within and between which generate, mediate and propagate pro-environmental behaviours. The conflation of theoretical levels (macro, micro, meso) with the topographic or geographic (nation, region, local) has received some attention in the literature (Brenner, 2001; Moore, 2008; Neumann, 2009), some of which has advised against such mixing. Nevertheless, for the purposes of our thinking at this early stage, we view the two as inherently linked, the theoretical levels (macro, micro, meso) as frames for or characterizations of the geographic, explaining, for example, the mainstreaming of new ideas and behaviours, such as those seen in youth cultures, intellectual and cultural trends and community action movements. Furthermore, we tentatively suggest that this paper is a contribution to Jones's 'phase space' which promotes a way forward for a 'conceptual middle road between space as a territorial anchorage and fixity *and* conceptions of space as topological, fluid and relationally mobile' (Jones, 2009: 496, emphasis in original). Indeed, the paper recognizes that in the context of pro-environmental behaviour the macro, micro and meso levels are not impervious and, critically, that interactions also occur across these levels.

The meso level, in contrast to the micro and macro levels, demonstrates the dynamism of local level social units and treats the whole rather than the sum of the parts (Schenk *et al*., 2007). Although macro level approaches have occupied themselves with the sum of the parts, the analysis has been too generalized and not sensitive enough. If we assume the parts are the individual members of a household and add their individual behaviours together (the sum) it does not always constitute the whole. There are additional behaviours that occur due to the interactions between individual parts. As a consequence, the meso level cannot simply be derived by aggregating up from the micro or disaggregating down from the macro level. This is similar to the idea of emergent properties which 'refers to properties of a whole that are not manifest in any of the parts, properties that arise by virtue of the 'structure' of the whole (structure in this sense being the arrangement of the parts that constitute the whole)' (Sibeon, 1999: 320). In terms of pro-environmental behaviour, for example, the individual travel choices of householders, when added together, do not constitute the total travel impact of the household, given that at times they may travel together and at other times separately. Thus, household members 'cannot be reduced to individually acting consumers' and households 'may have to be used more often as the appropriate unit of analysis' (Gronhoj, 2006: 501) particularly given that they may also germinate new behaviours both in individuals and groups.

Characteristics of meso level units therefore include heterogeneity (the diversity of actors), collective interest (for example, agreement that a new road should not be built), and shared social identity (feelings of belonging to a neighbourhood). An additional aspect of meso level units is what Chiesi (2007: 440) regards as 'club goods', that is, 'common property' shared by units within the meso level, such as a community hall or local nature reserve. A meso level unit can thus be recognized according to the goods it shares, which, Chiesi (2007: 440) argues, insiders 'are jointly interested in protecting … against outsiders'. Take, for example, neighbourhood green spaces in affluent areas of London, which are often gated and locked in an effort to protect them from non-neighbourhood members. In examining the role of meso level analysis in pro-social behaviour, Penner *et al*. (2005) similarly recognize

the importance of intergroup influences and belonging, which are arguably defined by the possession of shared goods or responsibility towards others within the same meso level unit, and because of this, of all the meso level units, the household is the one we consider most useful to examine in the context of pro-environmental behaviour.

Although relatively underutilized in research and hence there is a limited literature, adopting a meso level approach in the context of pro-environmental behaviour may help to frame those interactions that are not captured by the micro or macro levels or that take place between actors within meso level social structures, as drivers of pro-environmental behaviour. Indeed, 'it is only here, on this middle ground, that we can observe how the world is made in ways which remain free from those invidious choices which so often undermine even the most sophisticated observations' (Murdoch, 1997: 335). We thus view this paper's contribution to knowledge as most valuable in terms of the introduction of a preliminary theoretical argument on the significance of the meso level for understanding pro-environmental behaviour, focusing on what Sayre (2005: 276) argues 'should be the object of research', the 'processes and interactions – rather than the scale *per se*'.

V Reflecting on 'the household'

A household can be defined as the social unit occupying a single physical space, normally 'the house' but more accurately described as a place/space of residence, and is therefore best seen as both a social institution and a diverse range of physical living arrangements. Accordingly, the impact of a household on the environment varies depending on its size, occupants, inputs and outputs. Because of this, van Diepen (1998) regards households as functional, operational units. Societal and demographic changes over recent decades have meant that understanding what constitutes a household has been a popular topic for discussion in the literature (Buzar *et al*., 2005). As a starting point, the Office of National Statistics (ONS) define the household as a 'single person or a group of people who have the address as their only or main residence and who either share one meal a day or share the living accommodation' (ONS, 2005: 6). According to the ONS, when defining a household one cannot neglect that it is bounded by a physical structure (a residential unit), despite the fact that many consider the household to be more than that (Massey, 1993; Gregson and Lowe, 1995; van Diepen, 1998; Krantz, 2005). Van Diepen (1998), for example, argues that households are social units, which share the same language, norms and values, and are an expression of the ways in which people choose to live their personal lives. Moreover, Froud *et al*. (2000: 535) state that households are more than just residential units, and are 'institutions that mediate economic relations with the outside world and construct internal social hierarchies'.

Research on the household has tended to be fragmented, focusing on, for example, gender differences in the division of household labour and childcare, constructs of home and definitions of household size (Gregson and Lowe, 1995). There is much debate surrounding definitions of the household, how the household as a social unit is understood, and the 'changing social geometry' of the household in light of demographic change (Buzar *et al*., 2005). For example, Buzar *et al*. (2005) conclude that 'household-level demographic change lies at the nexus of the cultural, the economic and the urban' (Buzar *et al*., 2005: 428), making the household instrumental in shaping many important aspects of society. Other key perspectives on the definition and role of the household include: the economic, that is, a household is defined by its income, wealth, consumption and asset ownership (Froud *et al*., 2000; Smith, 2008); politics and power, such as how households interact with local institutions (Carr, 2005); and, statistical definitions such as those adopted by the ONS which

define households based on occupancy (ONS, 2005).

Research has also examined the interactions within households. Issues around the control of household resources have been considered by feminist research which has illuminated the ways in which gender influences and is influenced by household structure and routine household practices (Lawson, 1998; Schwanen *et al*., 2008; Safa, 2009). Froud *et al*. (2000: 535), for example, state that 'for most individuals, their access to income and wealth and their consumption decisions are mediated through membership of a household' and that social hierarchy and power relations between household members are (re)enforced as a result of input and control over expenditure decisions. Thus, the way in which income earning and routine household practices can challenge or reinforce inter-household inequalities (see Lawson, 1998, who explains this in the context of migration) demonstrates that 'the household is … both enabling and disenabling' (Taylor, 1999: 22).

The research in these areas has demonstrated with remarkable consistency that rarely are households harmonious or unified. That household members can struggle to reach consensus has been particularly apparent in studies examining household decision-making (Jürges, 2006); indeed, Gregson *et al*. (2007) demonstrate that even past household members, such as adult children, have some influence on household decision-making, reiterating the importance of considering households as heterogeneous. As Gronhoj (2006) suggests, household behaviour cannot be predicted from the values or attitudes of one household member, such as the nominal 'head' of household (unless it is a one-person household) as each household is determined, indeed defined, by its interactions. As Verbeek and Mommaas (2008: 631) explain, structures (households) 'influence actors at the same time that actors influence structures' hinting at the recursive or reciprocal nature of intra-household negotiation. These raise important issues for consideration in relation to pro-environmental behaviour; for instance, who in the household (dis)encourages such behaviour, and how might that depend upon the power and equity relations of the household. Access to household resources, for example, may either prevent or facilitate the purchase of energy efficient (which are typically the more expensive alternative) appliances while preoccupation with the household routine may leave little time for considering pro-environmental behaviours such as walking or cycling to work and composting. Indeed, there is an emerging literature within Geography and environmental sociology on this theme which explores the household as a framing device through which 'everyday' practice or social practice relating to environmental behaviour can be understood (Shove, 2003; Wallenborn, 2007; Verbeek and Mommaas, 2008; Bulkeley and Gregson, 2009).

Given the attention that issues relating to the household have received, it is surprising that the pro-environmental behaviour of households has received such little attention relative to these other topics, outwith the topics of waste and recycling. Indeed, it has been recognized that there is scope for further research particularly concerning how household pro-environmental behaviour might be better understood and, specifically, which pro-environmental behaviours householders may be more willing to undertake and why (Hunter *et al*., 2006). The next section therefore seeks to explore the work that has been undertaken in examining household pro-environmental behaviour prior to the introduction of the alternative conceptual approach.

VI The household and pro-environmental behaviour

The household is particularly suited to pro-environmental behaviour research given that it is a unit, which 'seems entirely under the control of the owner' (Dumreicher and Kolb, 2008: 323). That is, there are inputs

(shopping, time, awareness) and outputs (waste, energy) that the occupants of the household have control over, unlike, for example, a large organization where only the management team has ultimate responsibility. By examining the role of the household as an institution of the meso level, one is recognizing that households incubate interactions between macro and micro levels and, importantly, that understanding those interactions can also aid the understanding of pro-environmental behaviour. For example, work by Carr (2005: 71) critiques traditional approaches of understanding the household which 'assume that the function of the household can be understood independent of its local constitution', reinforcing the importance of local factors as emphasized by the meso level of analysis. A focus on the household thus allows research to acknowledge the importance of large-scale social processes and the negotiations that take place within the social unit (Krantz, 2005) which contextualize micro level activities. Indeed, neither the macro nor micro ends of the research spectrum deal well with these influences in combination, hence the utility of a household approach.

The way in which household pro-environmental behaviour has been examined is in the areas of household decision-making (Yi *et al*., 1999), household environmental impact (Hunter *et al*., 2006; Caird and Roy, 2007), and household consumption (Noorman and Uiterkamp, 1998; Hobson, 2003; Gilg *et al*., 2005; Bulkeley and Gregson, 2009). Again, as with the micro level, the predominance of recycling behaviours, and waste behaviour more generally, is apparent (see Yi *et al*., 1999; Barr and Gilg, 2005). Uusitalo discussed the environmental impact of household consumption as early as 1982 and attributed the growing impact to changes in societal consumption styles, for example, greater use of the car (in Gatersleben and Vlek, 1998: 142). Such impacts have been documented by Caird and Roy (2006: 1) who report that household energy consumption (heating, lighting, appliances and personal transport) accounts for over half of the UK's energy consumption, and 40% of total UK carbon dioxide emissions. Indeed, Caird and Roy (2006) predict that such impacts are expected to increase with the number of households rising dramatically over coming years and the extra purchasing of furniture, electrical and electronic goods, and fuel.[7] Recognizing such trends, Taylor (1999: 23) asserts that 'the final irony is that the family home as the locus of consumption looks set fair to cause the ultimate disruption, destruction of the earth as the home of humanity'. Clearly, this indicates the need to undertake more research at the meso level, particularly given that the adoption of pro-environmental behaviours is often contingent upon household decision-making processes as exemplified by Yi *et al*. (1999) in the context of recycling.

The opportunity presented by examining pro-environmental behaviour within households includes better understanding the motives for mass (or societal) support and social values which may be revealed through these interactions (if an appropriate methodology is used). This paper thus discusses the important role of interactions within households, and refers specifically to the role of gatekeepers promoting the adoption of pro-environmental behaviours within households. In addition to those interactions within households, interactions between households are also significant and, building on the importance of contexts and situational variables discussed earlier, we introduce the concept of locally activated, normative pro-environmental behaviour. Following this, we present our alternative conceptual framework reflecting the importance of household interactions by incorporating the meso level.

VII The household as a crucible of pro-environmental behaviour at the meso level

In line with the relational premise of this paper, we recognize that 'not only will scale

levels shift over time but also their definitions can shift as multiple observers vary in their identification of what distinguishes one emergent scale from another' (Manson, 2008: 782). Thus, while the household is currently predicated as belonging to the meso level, with changing demographic trends including declining household size (Buzar *et al*., 2005) and household members dividing their time between different houses (Safa, 2009), the situating of the household within the meso level may need subsequent reconsideration. Nevertheless, in the light of the discussion above, we view the household as suitable for reflection as part of the conceptualization of the meso level.

The significance of the household within the meso level can be explained by illustrating some of the interrelations between and within the household. Within the household, the influence of gatekeepers acting as social catalysts and driving the acceptance of pro-environmental behaviour has been the subject of some research. In terms of intra-household interactions, a study by Korheren and Lappalainen (2004) demonstrated the efficacy of formal environmental education in inducing more pro-environmental household behaviour. In the research, it was found that children were generally better informed about unsustainable livelihoods than their parents and that such knowledge was transferred from the children to the parents (Korheren and Lappalainen, 2004). Other research projects support this and demonstrate that environmental education can have a positive effect on increasing the environmental awareness of children and thus the pro-environmental behaviour of the rest of the household (Devine-Wright *et al*., 2004). While it may appear that examining the role of gatekeepers is a reversion to micro level psychological studies, Gronhoj (2006: 491) proposes that more than one member of a household may 'suggest, support, question, oppose, or in other ways influence household' pro-environmental behaviour (see Gregson *et al*., 2007, for a deeper appreciation of the role of children on mothers' waste behaviours), which sets the research problem firmly within the realm of social interactions rather than at the individual, psychological level.

The importance of interactions within the household in generating emergent pro-environmental behaviour draws heavily on the idea of normative behaviour, as used in both the TRA and TPB. Schwartz (1973), in the context of helping, proposed that norms are activated when individuals are aware that their actions can result in positive consequences for the helpee and thus ascribe responsibility to themselves to help (cited in Collins and Chambers, 2005). When applied in the context of household pro-environmental behaviour, this indicates the significance of householders knowing that their pro-environmental behaviour will have positive consequences, not only for the environment and wider society, but that it may be viewed positively by others. Indeed, Burton (2004) is concerned with the way many existing approaches 'fail to take account of the influence of significant others on decision-making' (Burton, 2004: 363). For example, family 'others' may exert more influence than work colleagues, but so far there has been no exploration of this. Work at the meso level could contribute to developing a clearer understanding of such interaction processes.

In addition to the influence of interactions *within* households, interactions *between* households (across the meso level) may similarly influence pro-environmental behaviour. Some research has indicated that at a local level the perception of one's own pro-environmental behaviour relative to that of neighbours (other local households) is important, particularly in the context of recycling behaviour. For example, it has been found to be significant in the frequency and use of kerbside recycling routines, which can take off or stagnate in particular neighbourhoods (Olli *et al*., 2001). Although it has been recognized that household

activities are not necessarily local (Safa, 2009) given that members of 'one household may divide its time between different locations' (Buzar *et al*., 2005: 416), the link between local level and the household has been well discussed (Marston *et al*., 2005). Moreover, households (rather the physical structure of the household) are typically arranged in neighbourhood structures and administration of these takes place at a local or ward level, such as UK Council Tax, waste and recycling collections. Thus, we see a demonstration of locally activated, normative pro-environmental behaviour, where certain behaviours have become mainstreamed across a local neighbourhood, dependent on the activities of a 'change champion' such as a prolific recycler, which induces a sense of obligation in neighbours on the same street. The idea of locally activated, normative pro-environmental behaviour builds on the perception of oneself in relation to other local actors and strongly relates to meso level units.

Building on this discussion, we thus present a conceptual framework for understanding pro-environmental behaviour by better exploring links to and within the meso level. Figure 4 is an adaptation of the TPB, highlighting the macro, meso and micro theoretical planes, acknowledging the under-theorized centrality of meso level units. The new aspects include: the introduction of feedback from the meso to macro level (this is a divergence from existing linear one-directional approaches) and the introduction of specific roles at the meso level. We introduce this model as a reference point for the development of our thinking. The primary purpose of this conceptual approach is thus as a heuristic device, aimed at demonstrating the importance of the meso level as a *generator* of new social values, a *mediator* functioning between the different levels of social reality, and a *propagator*, shaping the way those values become concretized in the real world.

As a mediator, the meso level functions by translating society-wide values through to individuals. This mediation function is also apparent within meso level units, which filter previously 'eccentric' actions such as animal welfare, recycling or energy saving,

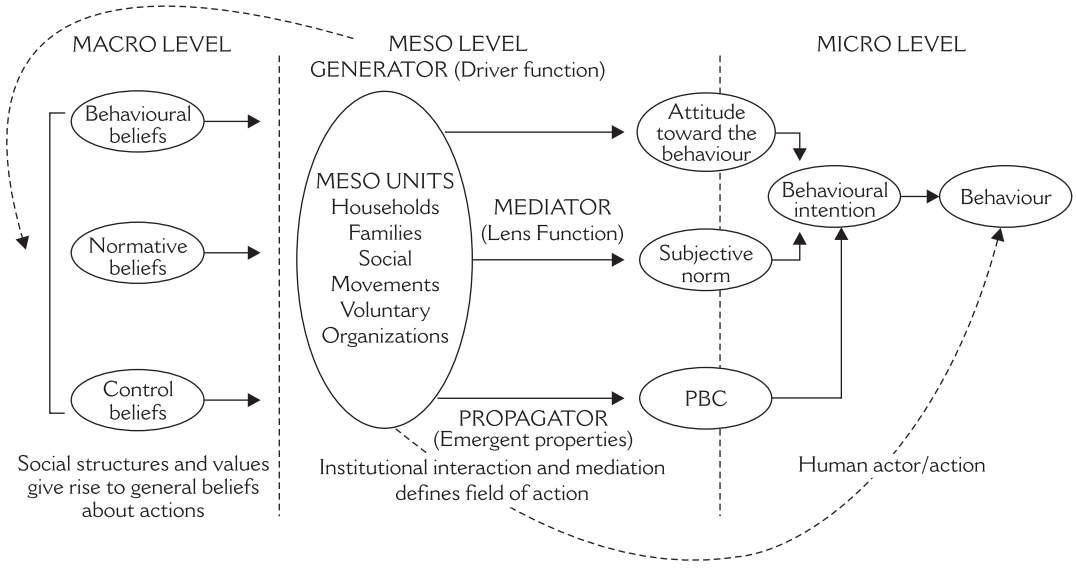

Figure 4 A conceptual framework demonstrating the importance of the meso level on pro-environmental behaviour

into households and communities where they come to be seen as legitimate. As a generator, the meso units themselves collect the results of the mediation and feed these back into the more general macro level, contributing to new society-wide values and beliefs. Lastly, as a propagator, the meso level is where society-wide (macro) values are grounded and made practical within the real-world situations of the meso units, concretized in households, families and communities. It is here that existing values and beliefs are operationalized and shaped, giving rise to and legitimizing new actions at the observable, individual (micro) level. A particular feature of the propagator function is in germinating and activating emergent behaviours across all or some of the individuals in a household that would not otherwise occur based solely on the beliefs and norms of each individual household member. Overall, the model demonstrates that although there are very general society-wide social values and beliefs these are always mediated through the meso level into individual actions, and that the meso level units can also help to generate or 'drive' society-wide values and beliefs in addition to simply mediating between macro and micro levels. In this way, meso level units are not merely *passive* recipients of macro level changes, nor are they simple aggregations of micro level behaviours. Instead, we see meso level phenomena as *active* units in the continuous creation of social life.

The macro level is where social structures and values give rise to general beliefs (behavioural, normative and control) about actions, which are also fed by the meso level through its capacity for generating new beliefs as a consequence of its role as a mediator and propagator. This shifts 'attitudes towards the behaviour', 'subjective norm' and 'PBC' from their location in the TPB onto the border of meso and micro levels and demonstrates that general social values only very rarely feed directly into individual behaviour. In general, the former are mediated through the meso level units within which individuals are socialized and live their social lives. For example, an individual's perceived behavioural control depends not simply on how they interpret 'control beliefs' individually, but also on how these control beliefs are shaped within households, families, voluntary organizations and so on.

Importantly, this approach highlights that the meso level acts as a crucible in which individuals are involved in the collective process of meaning construction and norm generation, including the formation of perceptions about the nature of social life and people's ability to shape it. It has been suggested that individual actions tend to be the focus of much research, because individuals are easily observable and able to respond to the researcher's questions. However, the approach presented here suggests that the meso level is deserving of further investigation and that research is needed to develop methods of exploring the household in order to better understand household pro-environmental behaviour.

VIII Conclusions

It is the contention of this paper that current environmental problems are symptomatic of societal change, but cannot be fully understood or effectively tackled because of the weaknesses of dichotomous thinking, which has tended to focus predominantly on the micro or macro level. Although many research studies have explored local initiatives and pro-environmental campaigns, we have argued that the theoretical significance of the meso level is not yet fully appreciated, nor has it been fully explored. This paper is aimed as a theoretical ground-clearing exercise, to show how research effort at the meso level may help to overcome some of the problems arising out of an exclusive focus on the micro or macro level. We have tried (in Figure 4) to show that, in terms of pro-environmental behaviour, households incubate and inform the behaviours of their occupants and that the household is itself an important unit of analysis. In addition, we have also introduced the idea of the meso level acting as

a mediator, generator and propagator, and argue that this is highly important in driving pro-environmental behaviour. Subsequently, it can be argued that in order to reduce household environmental impact the interactions at the meso level should not be underestimated, and that when formulating policies to instigate behavioural change this is a potentially fruitful avenue to pursue.

Given the preoccupation with the individual when attempting to understand pro-environmental behaviour and the orientation of national policy towards influencing individual behaviour, this paper offers some possible new directions for future research. First, there is a need for greater understanding of household pro-environmental behaviour in terms of interactions both within and between households, a result of which could lead to the development of more effective and sophisticated policies to increase levels of pro-environmental behaviour and decrease the environmental impact of households. Second, we propose that further research should unpack the meso scale of social reality more systematically, specifically addressing how belonging to a meso unit can have an effect upon pro-environmental behaviour. Third, there is a need for research on locally activated pro-environmental behaviour – is this a more efficient way to encourage pro-environmental behaviour and, if so, how can it be used in policy-making? Finally, we suggest that a significant opportunity exists for the use of innovative methodological approaches to better understand not only what pro-environmental behaviour households (and other meso level units) do, but also to grasp *why* such pro-environmental behaviours are undertaken (Reid *et al*., 2009). In order to achieve this, it will be necessary to devise methodologies capable of tapping into the interaction processes both within and across households.

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Notes

1. We explicitly use 'level' to describe the micro, meso and macro, to distinguish these as different parts of an abstract scale of social structure, which has micro and macro at the opposing ends of the continuum.
2. We view values as different from attitudes, in so far as 'values … are seen to be permanent' or more stable and 'important to society', while attitudes 'are fleeting and unstable' and are a reflection of the individual (Abercrombie *et al*., 2006: 409).
3. Within the literature, 'attitudes' are considered a 'psychological variable' and often these two terms are used synonymously and/or interchangeably. This can create some confusion and this paper discusses 'attitudes' only. There is scope for expansion on the use of the term psychological variables (as used by Burton, 2004; Barr and Gilg, 2005; Jackson, 2005; Salmela and Varho, 2006) but this is beyond the purpose of the present paper.
4. Much attention has been given to understanding the role of situational variables in shaping pro-environmental behaviour (Kaiser *et al*., 1999; Norlund and Garvill, 2002; Hassler, 2006).
5. Jackson (2005) provides a useful review of other conceptual approaches towards understanding behaviour citing the Value-Belief-Norm Theory and other Rational Choice Theories. Arguably, the most useful elements of such conceptual approaches have been their employment as heuristic devices, as starting points for empirical research and conveying, particularly to policy-makers, the factors perceived as driving the (pro-environmental) behaviour of the individual (Jackson, 2005).
6. This complexity we attribute to the increased number of factors influencing pro-environmental group behaviour. That individuals combine to create social units means that more attitudes (in quantity but also perhaps in spectrum) and a greater number of important others (to which consideration is given) exist to influence pro-environmental behaviour.
7. Although there is now some uncertainty around the impact of the current recession on fewer new or moving households and household consumption.

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